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Letter of Transmittal

If enclosures are not as noted, kindly notify us at once.

## Kennedy/Jenks/Chilton

By Kelye Dullivan

3336 Bradshaw Road, Suite 320 Sacramento, California 95827 916-362-3251

acsimile 916-362-9915

To California Regional 1	bater Quality Date 3/24/88 Job No. 880504
Control Board	Attention David Bacharauski
107 South Brandwa	
Las Angeles Ca 900	
We are sending you: ☐ Attached or vig	
☐ Mail ☐ Overnight	Courier   Facismile ( total pages including this sheet)
the following items:	
☐ Plans ☐ Prints	☐ Specifications ☐ Samples ☐ Shop Drawings
Copy of Letter 🗆 Change Order	& Revised War Plan
Copies Date No.	Description
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	RPL THE TANK
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	D FR
These are transmitted as checked below:	
☐ For information and coordination	☐ Return material when review completed As Requested
☐ For approval by	(date/time). Return to   ☐ Returned after loan to us
	(date/time). Return to
Remarks	
Dear David:	
Attached	is the levised work plan for
	Anotivo Sito. At this time use
bou to poolin	second specificals on specific
In order to	Lisalize these avangements, it is
Receptory the	Le uso Olecione your o comments
by March 3	1888. Thankyou for your
cooperation.	
	Direcely. Kolus
Copies to:	Kennedy/Jenks/Chilton

## Kennedy/Jenks/Chilton

## Consulting Engineers

3336 Bradshaw Road, Suite 320 Sacramento, California 95827 916-362-3251

24 March 1988

Mr. William Gross, Facilities Manager Pacific Airmotive Corporation 2940 North Hollywood Way Burbank, California 91505-1095

Subject: Preliminary Site Assessment and Revised
Work Plan for Drum Storage Areas
Pacific Airmotive Corporation
Burbank, California

Burbank, California (K/J/C 882504.00)

Dear Mr. Gross:

In accordance with our Agreement for consulting services dated 21 January 1988, we are pleased to submit this summary report for the drum storage areas at the Pacific Airmotive Corporation (PAC) facility in Burbank, California. This report presents our review of PAC's current drum product and waste storage areas and a Revised Work Plan to investigate possible release of chemicals to the subsurface from these areas. This Revised Work Plan incorporates Regional Water Quality Control Board (RWQCB) comments on the original Work Plan dated 17 February 1988.

## INTRODUCTION

On 28 January 1988, Mr. Noel Lerner of Kennedy/Jenks/Chilton toured the PAC facility and visited outside areas where chemicals are stored. Mr. William Gross, PAC Facilities Manager, accompanied Mr. Lerner on this visit. Our descriptions of the chemicals stored at the various areas are based on information provided by Mr. Gross. The areas visited were those identified by Mr. David Bacharowski of the RWQCB during his visit on 29 December 1987. The specific areas of concern are as noted in the letter dated 6 January 1988 from Mr. Sakaida of the RWQCB. The following PAC buildings are included:

- o Test Cell No. 6
- o Building No. 10
- o Building No. 2

In addition to investigating the possible release of chemicals to soils in these areas, the RWQCB asked PAC to review their compliance program for sumps and underground storage tanks and to present plans for a new chemical containment facility. This report summarizes the present conditions at the PAC facility and presents a Revised Work Plan, provided as Attachment A, to evaluate subsurface soils at the PAC drum storage areas.

Mr. William Gross 24 March 1988 Page Two

## DRUM STORAGE AREAS

The drum storage areas at the PAC facility are located outside three facility buildings and are presently uncontained. The specific locations and chemicals stored in these areas are described in the following sections. Chemical information is provided in the Material Safety Data Sheets which are enclosed as Attachment B.

## Test Cell No. 6

Four drum storage areas are located near Test Cell No. 6 and are shown on Figure 1. These areas are:

- Area 1. Chemical waste and product storage area located to the northeast of Test Cell No. 6.
- Area 2. Spent thinner (mineral spirits) storage area located to the south of Test Cell No. 6.
- Area 3. Hydraulic oil storage area located to the south of Test Cell No. 6.
- Area 4. Solvent (mineral spirits) storage area located directly south of Area 2.

The chemicals reportedly stored in these areas were identified by a visual inspection of the chemical drum labels and from information provided by Mr. Gross. The chemicals identified, which are presented in Table 1, include chlorinated solvents and petroleum products.

## Building No. 2

A solvent pipeline (abandoned) is located at the northeast corner of Building No. 2. Reportedly, this pipeline formerly transported solvents for particleaning operations to a building on the adjacent property. This pipeline was preportedly plugged but remains abandoned in the ground. The approximate location of this pipeline is shown on Figure 1. A list of the chemicals reportedly handled at this area is presented in Table 1.

of line location needed to 10cate test Do: Mr. William Gross 24 March 1988 Page Three

## Building No. 10

A storage area for empty drums is located near Building No. 10. This area, directly northeast of the building, is shown on Figure 1. The chemicals identified at this site are presented in Table 1. These chemicals include chlorinated solvents and petroleum products.

## SUMPS/UNDERGROUND TANKS COMPLIANCE PROGRAM

## Sumps

-3303 N. Hdlywood way a4 stage clarker (varied) According to Mr. Gross, the PAC facility currently operates two concrete sumps, both of which are located at Building No. 2. These sumps are shown on Figure 1. One sump is located in the southeast corner of the building and is lined with stainless steel. The other concrete sump is located directly west of Building No. 2. This sump receives run-off from the steam cleaning pad and blowdown from the cooling tower and boiler. The grit contained in the run-off is allowed to settle and oil and grease is separated from the blowdown water in the sump. The remaining water is then pumped into a 4,000-gallon above ground storage tank from which it is then transferred to an evaporator. Although the sump is currently unlined, PAC is planning to install a stainless steel liner to comply with RWQCB underground tank regulations. In addition, PAC will periodically inspect the integrity of the liner.

Underground Tanks (11 total) (6.4. 1-500gal.-soland)

In December of 1983, all but three underground tanks at the PAC facility were reportedly removed for offsite disposal. A 4,000-gallon underground tank used for storing cooling tower and boiler blowdown water was subsequently relocated aboveground. As indicated by the letter included as Attachment C from the tank removal contractor, the tank was removed prior to the implementation of the 1 January 1984 County and State underground tank ordinances. Thus sampling of the surrounding soils was not performed. At the time of removal, the tank was approximately one and one-half years old and was reportedly not found to be leaking. Currently, this tank is being used aboveground, and is not leaking.

The other two tanks, both 12,000-gallon tanks, are being used for storage of Jet A (jet fuel). Both tanks are periodically pressure tested to conform with local ordinances. Results of recent pressure tests are enclosed as Attachment D. Plans for installing appropriate leak detection devices for the tanks have been submitted to the City of Burbank for review prior to installation.

- To inform Ry. Bd when upgrade made
- mr. Gross

L.AG. DPW mend also be notified Local Agency, Mr. William Gross 24 March 1988 Page Four

- 1. Separate acid and flammable materials storage areas
- 2. Separate product and waste material storage areas
- 3. Secondary containment features
- 4. Sprinkler system
- 5. Alarm system

The final containment facility design will be reviewed with the Fire Department for compliance with local drum storage ordinances.

A catalog specification for the proposed containment facility is enclosed as Attachment E.

If you have any questions or if you need additional information, please contact us at your convenience.

Very truly yours,

KENNEDY/JENKS/CHILTON

M. Leines

Noel M. Lerner Project Manager

NML:vh

Enclosures: Attachment A - Revised Work Plan, Preliminary Site Assessment,
Drum Storage Area

Attachment B - Material Safety Data Sheets

Attachment C - Letter to Russell Davis from Bob Davis for the Removal of the 4,000-gallon Tank

Attachment D - Underground Tank Pressure Test Results

Attachment E - Catalog Specifications for the New Containment Facility

Attachment F - Total Petroleum Hydrocarbons (TPH) Analysis
Protocol

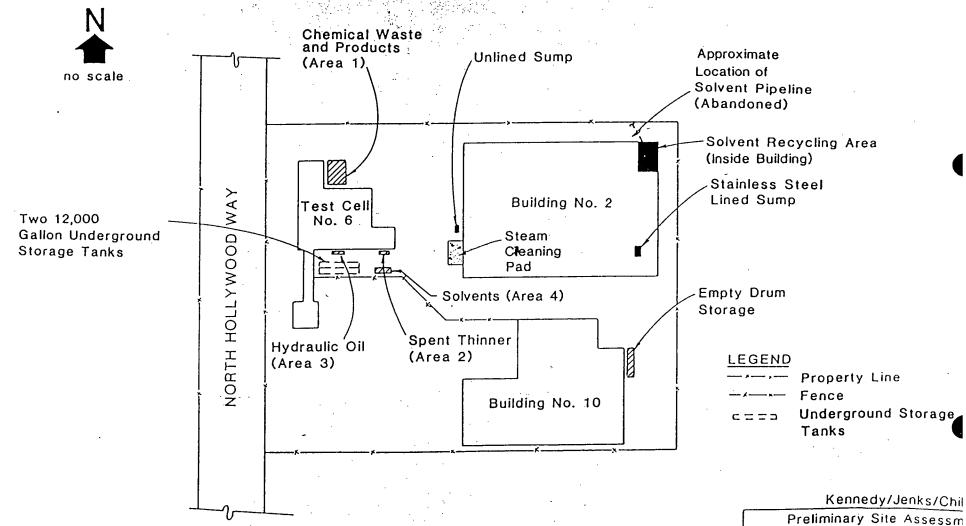
TABLE 1

## CHEMICALS REPORTEDLY STORED AT THE PACIFIC AIRMOTIVE CORPORATION DRUM STORAGE AREAS

Kennedy/Jenks/Chilton

	TEST CELL NO	BUILDING NO. 2	BUILDING NO. 10			
Area	a 1	Area 2	Area 3	Area 4		
Chemical Wastes	Chemical Products	Spent Thinner	Hydraulic Oil	Solvents	Solvent Pipeline (Abandoned)	Empty Drum Storage
011	Oil	Mineral Spirits	Chevron AW Hydraulic Oil 32	Mineral Spirits	Union 76 Stoddard Solvent fSafe-Sol	Oil & Solvent Process Co. #27 Paint Thinner
Jet Fuel	Petroleum Naptha					
a1,1,1-TCE	<sup>a</sup> 1,1,1-TCE					a1,1,1 - TCE
bTurco-Fluro-Chek P-41 Penetrant	Solvent Processing Co. #27 Paint Thinner					Penetrating Oil
CTurco-Fluro-Chek WP-167 Penetrant	Magnaflux	i				
d <sub>Magnafilm 31</sub>					:	
e <sub>Turco</sub> Supercarb						

al,1,1-TCE = 1,1,1 Trichloroethylene
bTurco-Fluro-Chek P-4l Penetrant = Petroleum Oil
cTurco-Fluro-Chek WP-167 Penetrant = Petroleum Distillate
dMagnafilm 31 = Heavy Naptha, Butoxyethanol
eTurco Supercarb = Methylene Chloride, Phenol
fSafe-Sol = Petroleum Distillate, Methyl Chloride, Perchloroethylene



NOTE: Figure based on Site Plan dated 8-11-81 Serial #8944, Index 76684. Prepared for Purex Industries Inc., Burbank, California. Preliminary Site Assessm Pacific Airmotive Corporal Burbank, Califor

Drum Storage Art

K/J/C 882504 March 19

Figure

1089

Attachment to Kennedy/Jenks/Chilton Letter to Pacific Airmotive Corporation dated 24 March 1988

## ATTACHMENT A

REVISED WORK PLAN
PRELIMINARY SITE ASSESSMENT
DRUM STORAGE AREAS

# REVISED WORK PLAN PRELIMINARY SITE ASSESSMENT DRUM STORAGE AREAS (K/J/C 882504.00)

## INTRODUCTION

In accordance with our Agreement dated 21 January 1988, a Revised Work Plan has been developed by Kennedy/Jenks/Chilton to evaluate the possible presence of chemicals below drum storage areas at the Pacific Airmotive Corporation (PAC) facility. This Revised Work Plan incorporates comments received from Mr. David Bacharowski of the RWQCB during our telephone conversation with him on 7 March 1988 and details the specific tasks required to evaluate chemicals that are present in soil below the storage areas.

## PROPOSED SCOPE OF WORK

## Task 1 - Soil Investigation of Drum Storage Areas

Ten soil borings will be drilled to collect soil samples for laboratory analyses and field monitoring for the presence of organic vapors. The locations of these ten borings are shown on Figure A-1. They include:

## o Test Cell No. 6

Chemical Waste and Product Storage Area - four borings Spent Thinner (Mineral Spirits) Storage Area - one boring Hydraulic Oil Storage Area - one boring Solvent Storage Area - one boring

## o Building No. 2

Solvent Recycling Pipeline (Abandoned) - one boring

## o Building No. 10

Empty Drum Storage Area - two borings

The borings will be drilled by truck mounted hollow-stem auger to a depth of approximately ten feet. The auger will be steam cleaned prior to its initial use and then after each use to reduce the likelihood of cross contamination of porings. The shallow borings will then be backfilled with a 50/50 mixture of Montery sand and granular bentonite.

Samples will be collected at five-foot intervals beginning at the ground surface with a driven split-spoon sampler. Soil samples will be collected in brass liners, covered with Teflon end sheets, and secured by plastic caps. The end caps will be taped and the liners will be labeled and placed in an ice chest for transport to the laboratory for analysis as described in Task 2. The sampler will be steam cleaned prior to each use to reduce the likelihood of cross contamination of samples. Cuttings will be stored onsite in drums

NOTE: Figure based on Site Plan dated 8-11-81 Serial #8944, Index 76684. Prepared for Purex Industries Inc., Burbank, California.

Proposed Soil Boring Locations

K/J/C 882504.00 March 1988

Burbank, California

Attachment A to Pacific Airmotive Corporation Letter of 24 March 1988

suitable for the temporary storage and transport of hazardous wastes pending the results of laboratory analysis. Kennedy/Jenks/Chilton will assist PAC in coordinating the proper disposal of the drill cuttings; however, being the generator of the waste, PAC will be responsible for contractual arrangements for the disposal of this material.

Soil from a second brass liner will be placed in a glass container and covered with aluminum foil. The container will be placed in a warm area for 5 to 10 minutes (depending upon ambient temperatures) to promote volatilization.

FID

Container headspace will be analyzed for the presence of organic vapors with either a Foxboro Portable GC-128 Organic Vapor Analyzer equipped with a flame ionization detector of an HNU equipped with a photoionization detector. If organic vapors are detected in the headspace from the 10-foot sample, driving will continue at 5-foot intervals until elevated concentration of organic vapors are not detected by the headspace analysis.

## Task 2 - Laboratory Analyses of Soil Samples

A minimum of two of the three samples taken at the 1, 5, and 10-foot interval (1-5) from each boring will be analyzed for chemicals reportedly stored at the particular areas. All three samples (2.5, 5, and 10-foot interval) from the proposed analyzed for chemicals previously used at this location. The proposed analyses are presented in Table A-1.

## Task 3 - Preliminary Site Assessment

Upon completion of Tasks 1 and 2, we will prepare a letter report summarizing the results of the field and laboratory investigations. The report will include a site map showing the location of soil borings and boring logs, a description of shallow soils encountered, and the results of field and laboratory analysis. Our report will also indicate sample collection procedures and the analytical methods that were followed.

The report will present conclusions regarding the vertical extent of chemicals detected and the need for additional investigation, if warranted. Recommendations regarding the scope of subsequent phases, if needed, will also be presented.

## SCHEDULE

Within three weeks of receiving written approval of the Work Plan from the AWQCB, field sampling will be completed. The Preliminary Assessment Report will be submitted to the RWQCB within 8 weeks of completion of the field work.

Attachment A to Pacific Airmotive Corporation Letter of 24 March 1988

## TABLE A-1

## PROPOSED LABORATORY ANALYSIS SCHEDULE PRELIMINARY SITE ASSESSMENT PACIFIC AIRMOTIVE CORPORATION (K/J/C 882504.00)

	Areaa	Chemicals Stored	Analyses	
	Test Cell No. 6 (7)			
Area: 1	o Chemical Waste and Products Storage Area	Petroleum Products Chlorinated Solvents	Hydrocarbon Scan <sup>b</sup> VOC <sup>c</sup>	
2	o Spent Thinner	Mineral Spirits	Hydrocarbon Scan <sup>b</sup> Purgeable Aromatics <sup>d</sup>	
3	o Hydraulic Oil	Petroleum Products	Oil and Grease <sup>e</sup>	
4	o Solvents Building No. 2 (1)	Mineral Spirits	Hydrocarbon Scan <sup>b</sup> Purgeable Aromatics <sup>d</sup>	
	o Solvent Pipeline (Abandoned)	Stoddard Solvent Mineral Spirits Safe-Sol	Hydrocarbon Scanb VOC (8240)	ر. ا
	Building No. 10 (2)			
	o Empty Drum Storage Area	Petroleum Products Chlorinated Solvents	Hydrocarbon Scan <sup>b</sup> VOC <sup>c</sup>	

- a. Refer to Figure A-1 for location of soil borings.
- b. Hydrocarbon scan by gas chromatography utilizing a flame ionization detector (GC/FID) and commercial hydrocarbon fuels as standards. Refer to Attachment F for laboratory protocol.
- c. VOCs (Volatile Organic Compounds) by EPA Method 8240 for purgeable organics by gas chromatography/mass spectroscopy (GC/MS).
- d. Purgeable Aromatics by EPA Method 8020 with second-column confirmation.
- e. Oil and grease by EPA Solid Waste Method 9071, freon extraction followed by evaporation and gravimetric quantitation.

ATTACHMENT B
MATERIAL SAFETY DATA SHEETS

## MATERIAL SAFETY DATA SHEET

EXXON COMPLNY, U.S.A.

P.O. ECX 2180

HOUSTON, TX 77252-2180

## A IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME TURED DIL 2380 PRODUCT CODE 217556 - 02380

CHEMICAL NAME

Aviation Synthetic Lubricant

CAS NUMBER

Complex Mixture

Cas Number not applicable

PRODUCT APPEARANCE AND ODOR Clear liquid, yellow color Mild fatty odor

EMERGENCY TELEPHONE NUMBER (713) 656-3-24

## B. COMPONENTS AND HAZARD INFORMATION

COMPONENTS

CAS NO. OF

APPROXIMATE

COMPONENTS Mixture

CONCENTRATION

Sase lubricant of polyol esters

Proprietary additives

See Section Elfor Health and Hazard Information

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

Health Flammability Reactivity BASIS

1 Recommended by Exxon

EXPOSURE LIMIT FOR TOTAL PRODUCT

5 mg/m3 for mist in zir

Recommended by Exxon

## EMERGENCY AND FIRST AID PROCEDURES

BASIS

### EYE CONTACT

If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

### SKIN CONTACT

In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

Vapor pressure is very low. Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from not product, immediately remove from exposure and call a physician. If breathing is irregular or has stopped, start resuscitation; administer Oxygen, if available. If overexposed to oil mist, remove from further exposure until excessive oil mist condition subsides.

If imposted, DS WCI induce vomitting, cut) a physician immediately

68

1000年後十二年後的

ISSUE DATE: 10-29-85

SECTION 1 - PRODUCT NAME: Turon Fluro-Crek P-41 Peretrant

Manufacturer's Name:

TURCO PRODUCTS

Address: Emergency Telephone No.: 24600 So. Main Street, Carson, CA 90749

(213) 5343300

SECTION II - HAZARDOUS INFORMATION :

CONDUIT TO	C.A.S.	C4 FC PO E/11/14	Walle	ACGIH TLY	OSHA TWA	<b>x.</b> w1.
Compositiones not defined as recardous by U.S. Dagot, of Lawer	Ne Estd	Nt Ls:	d Dilesto	Nt Listed	Rt Listed	
None		Apl.	N. Apl.	N. 50	ol.	
PROPER SHIPPING NAME:  Petroleum Oil		HAZARD CL		HAZARO I.C	). No.	

SECTION III - PHYSICAL DATA :

BOILING POINT, F: 370	SPECIFIC GRAVITY: 0.936
VAPOR PRESSURE (mmHg): Less than 20	VOLATILE W BY VOL: Negligible
VAPOR DENSITY (AIR = 1); More than 1 APPEARANCE AND ODDR:	EVAPORATION PATE  (Bu. Ac. = 1): Less than 1
Clear, yellow-green liquid - petroleum odor	SOLUBILITY IN WATER: Negligible  pH Not Applicable

## SECTION IV - FIRE AND EXPLOSION HAZARDS:

FLASH POINT AND METHOD USED:

Above 200°F (Pensky-Martens Closed Cup)

EXTINGUISHING MEDIA:

Foam, Carbon dioxide, Dry chemical SPECIAL FIRE FIGHTING PROCEDURE AND PRECAUTIONS:

Use self-contained respiratory protection.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None

SECTION V - EMERGENCY, FIRST AID AND HEALTH INFORMATION:

EFFECTS OF OVER EXPOSURE: EYES: Moderate to severe irritation

SKIN:

Moderate to severe irritation, drying, defatting.

INHALATION: Moderate irritation, dizziness, headache. Mists: Severe respiratory irritation, nausea.

INGESTION

Severe irritation to gastrointestinal tract, nausea.

MEDICAL CONDITIONS WHICH WAY BE AGGRAVATED

None known

Discard contaminated shoes.	•		1
SECTION IX - OTHER INFORMATION:			
SPECIAL PRECAUTIONS - STORAGE AND HAN acents.	OLING: Store in dry protected area	a away from stron	ng oxidizing
	blashing. Use appropriate protect		
Use appropriate protective	ED COUPMENT, Relieve pressure. Cove by Clushing with solvent. Collect couldment.	r openings to avoit flushings for o	old spurting. disposal.
DATE PREPARED. 10-29-85	DATE REVIEWED		
mw'		•	* 5.

SECTION 1 - PRODUCT NAME: Turco Fluro-Ords WE-167 Foretrant

ISSUE DATE. 10-30-85

Manufacturer's Name:

Address:

TURCO PRODUCTS

Emergency Telephone No.:

(213) 634-3300

COMPONENTS	C.X.S Human	1	17 K 10 K 17 K	KAL Waste	ACGIH TLV	OSHA TWA	x . %7
Components not defined as hazardous by U.C. Dogt. of Labor	Nt Listed	i Net	std	NtLstd	Ntlstd	Nt Listed	
•					·		
CARCINOGENS		нтр		up:		© H ¥	
None	N.	Apl.	N.	Aṗl.	N. Apl.		
PROPER SHIPPING NAME:	<del> !</del> .	HAZARO C	LASS		HAZARD I.D	. не,	
Petroleum distillate	•	Combus	cible	liquid	UN 126	58	

24600 So. Main Street, Carson, CA 90749

### SECTION III - PHYSICAL DATA:

BOILING POINT, 'F: 350	SPECIFIC GRAVITY: 0.92			
VAPOR PRESSURE (mmhc): Less than 20	VOLATILE, 1/2 BY VOL: 57			
VAPOR DENSITY (AIR = 1):   More than 1	EVAPORATION RATE			
APPEARANCE AND ODOR:	(Bu, Ac. ≠ 1): Less than 1			
Clear, yellow-green liquid, petroleum odor	SOLUBILITY IN WATER: EMUISITIES  PH Approx. 7			

### SECTION IV - FIRE AND EXPLOSION HAZARDS:

FLASH POINT AND METHOD USED:

160°F (Pensky-Martens Closed Cap)

EXTINGUISHING MEDIA:

FORM Carbon dioxide, Dry chemical SPECIAL FIRE FIGHTING PROCEDURE AND PRECAUTIONS:

Use self-contained respiratory protection.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

## SECTION V — EMERGENCY, FIRST AID AND HEALTH INFORMATION:

EFFECTS OF OVER EXPOSURE: EYES: Moderate to severe irritation

SKIN:

Moderate to severe irritation, drying, defatting.

INHALATION: Moderate irritation, dizziness, headache. Mists: Severe respiratory irritation, nausea.

WGESTION ...

Severe irritation to gastrointestinal tract, nausea.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED.

None known .

sub Flush affected area with clean cool water. Wash with soap and water. Rinse thorough
ly, if irritation persists, obtain medical attention.
make now remove to fresh air. If breathing is difficult, administer oxygen. If breathing
has stopped, apply artificial respiration. Obtain medical attention.
INGESTION Do not induce voniting. If voniting occurs spontaneously, keep head below hip level to reduce possibility of aspiration pneumonitis. If victim is conscious, dilute by giving large volumes of milk or vater. Obtain immediate medical attention. Never attempt to give anything by mouth to an unconscious person.
PRIMARY ROUTES OF ENTRY: INHALATION X SKIN CONTACT X OTHER
SECTION VI - REACTIVITY DATA :
STABILITY: STABLE X UNSTABLE HAZARDOUS POLYMERIZATION WILL NOT OCCUR
CONDITIONS TO AVOID
Contact with Strong exidizing materials
PAZARBOUS DECOMPOSITION PROBUCTS.
Carbon monoxide, dioxide, other toxic volatile organic compounds
SECTION VII — SPILL, LEAK AND DISPOSAL PROCEDURE:
SPILL OR RELEASE PROCEDURE CONCENTRATE: Contain spillage. Stop leak at source if this can be done
safely. Ventilate area. Evacuate nonessential personnel. Pump liquid into DOT-approved
drums for disposal. Absorb remaining liquid into inert absorbent and place in DOT-
approved drums for disposal. Wash area with water. Collect washings and place in DOT-
approved drums for disposal. Keep concentrate and wash water from entering sewers or
waterways.
USE SOLUTION: As for concentrate
DISPOSAL INFORMATION: CONCENTRATE: (1) Transfer to reclaiming center for recycling or reuse, if
possible. (2) Transfer to licensed hazardous waste treatment or disposal site for disp
sition under applicable local, state and regional regulations as hazardous waste.
SPENT SOLUTION AND RINSES: D.
SPENT SOLUTION AND RINSES: Discose per (1) or (2) above. Rinse water may be treated by neutral
izing, allowing to stand and skimming off separated solvent and soil. Residual organic
matter may be removed by oxidation and/or carbon treatment. Clarified rinse water may
released to sewer if local regulations permit.
SECTION VIII - SPECIAL PROTECTION INFORMATION:
RESPIRATORY PROTECTION: 11 TLV is exceeded, a NIOSK-approved self-contained breathing apparatus, positive pressu
hose mask or air line mask is advised. These should have a full face piece and be operated in a positive pressurance. For limited exposure time, in areas of good ventilation, a full face mask with an organic vapor cartridge
Canister may be used. These must not be used in any areas where a danger of oxygen deficiency exists, such as pa
ly enclosed or low lying areas, including sumps or tanks. If respirators are used, a formal training and acreen.
program must be initiated. See 79 CFR 1910-134.  VENTILATION:
Maintain sufficient mechanical ventilation to keep concentration below TLV.
PROTECTIVE EQUIPMENT: CHEMICAL FACE SHIELD OR GOGGLES:X
GLOVES X BOOTS X APRON X PROTECTIVE SUIT
GLOVES, BOOTS, APRON AND SUIT MADE FROM: Solvent resistant neoprene
RECOMMENDED PERSONAL HYGIENE: Wash hands and Tace with soap and water before smoking or eat:
Immediately remove contaminated clothing. Launder before reuse. Do not launder at hor Discard contaminated shoes.
SECTION IX - OTHER INFORMATION:
SPECIAL PRECAUTIONS - STORAGE AND HANDLING
Store in dry protected area away from strong oxidi
MIYING
Use care to avoid splashing. Use appropriate protective equipment.
REPAIR AND MAINTENANCE OF CONTAMINATED SOURMENT HETTENE PROSSURE. COVER OPERITIES TO SVOID SPUT
- 1 Ciean Exterior and interior by (lushing with solvent college (lushings for dispose)
Dalk execution
DATE REVIEWED.

10-30-85

MEDICAL EMERGENCY ONLY, 24 HOUR SERVICE: 1-800-328-0026

MAN-GILL CHEM\_CO. (MAGNUS) Product Information: 1-800-328-9745

Osborn Bldg St. Paul, MN 55102 Date of Issue: March 7, 1986

St. Clair Ave. Cleveland, OH 44117

## 1.0 IDENTIFICATION /

1.1 Product Name: Magnafilm 31

1.2 Product Type: Corrosion Inhibitor

## 2.0 HAZARDOUS INGREDIENTS /

TLV (mg/m3)
TWA STEL

/2.1 Butoxyethanol (butyl cellosolve) 111-76-2 (skin)

 $\frac{1 \times A}{120}$ 

2.2 Heavy naphtha 64741-92-0 & 64742-48-9

200 ppm TWA

## 3.0 PHYSICAL DATA /

3.1 Appearance and Odor: Clear amber liquid; sweet odor

3.2 Solubility in Water: Negligible

3.3 pH: NA

3.4 Boiling Point: 300F Specific Gravity: 0.7-0.8

3.5 Vapor Density: Unk Evaporation Rate: <1

## 4.0 FIRE AND EXPLOSION DATA /

4.1 Special Fire Hazards: None

4.2 Fire Fighting Methods: Use fog, foam or fine water spray.

4.3 Flash Point: 104F TCC

4.4 Flammable Limits - Lower: Unk Upper: Unk

## 5.0 REACTIVITY DATA /

5.1 Stability: Stable under normal conditions of handling.

5.2 Conditions to Avoid: High temperatures, heat, sparks or open flame; strong oxidizing agents.

## 6.0 SPILL OR LEAK PROCEDURES / USE PROPER PROTECTIVE EQUIPMENT

6.1 Cleanup: Remove all ignition sources. Recover free liquid. Add absorbent to spill area.

6.2 Waste Disposal: Consult state and local authorities for restrictions on disposal of chemical waste.

C = Cailing Limit, Not To Be Exceeded

088

7.0 HEALTH HAZARD DATA /

CAUTION

7.1 Effects of Overexposure:

Eyes: Causes irritation.

<u>Skin</u>: May cause irritation, depending upon the duration of

exposure.

If Swallowed: Can cause irritation, nausea, stomach distress.

If Inhaled: May cause breathing difficulties, dizziness, headache

or unconsciousness.

7.2 Other Data: Butoxyethanol penetrates the skin easily. Frequent or heavy contact may damage kidneys, liver, blood and/or marrow.

Causes corneal (eye) damage.

## 8.0 FIRST AID /

8.1 Eyes: Flush immediately with plenty of cool running water. Remove contact lenses. Continue flushing for 15 minutes.

8.2 Skin: Flush skin with plenty of cool running water. Wash

thoroughly with soap and water.

8.3 If Swallowed: Rinse mouth; then drink 1 or 2 large glasses of water. DO NOT induce vomiting. Never give anything by mouth to an unconscious person.

8.4 If Inhaled: Move immediately to fresh zir; if breathing is difficult, administer oxygen.

IF IRRITATION OR DISCOMFORT PERSISTS, CALL A PHYSICIAN.

## 9.0 SPECIAL PROTECTION INFORMATION /

9.1 Respiratory: Ventilate to maintain exposure below TLV. Use a NIOSH/MSHA approved organic vapor respirator or self-contained breathing apparatus in high concentrations.

9.2 Skin: Use hydrocarbon-resistant rubber or plastic gloves.

9.3 Eyes: Splashproof glasses, goggles or face shield.

## 10:0 ADDITIONAL INFORMATION/PRECAUTIONS /

10 1 DOT Class: Not DOT regulated.

### KEEP OUT OF REACH OF CHILDREN

The above information is believed to be correct with respect to the formula used to manufacture the product. As data, standards and regulations change, and conditions of use and handling are beyond our control, NO WARRANTY, EXPRESS OR IMPLIED, IS MADE AS TO THE COMPLETENESS OR CONTINUING ACCURACY OF THIS INFORMATION.

- CHRONIC HEALTH HAZARD - SEE SECTION . ISSUE DATE: 10-31-85

CH1 0 - INSIGHIFICANT

Manufacturer's Name:

TURCO PRODUCTS

Address:

24600 So. Main Street, Carson, CA 90749

Emergency Telephone No.:

(213) 634-3300



## SECTION II - HAZARDOUS INFORMATION :

гтизисчис	CAS.		€U 1	1074 1844 16	ACCIH TLY	OSHA TWA	*. \
-Methylene chloride	75092	100	00 -	U080	100 PPM	500 PPM	40
- Fhenol	108952	101	20	U188	5 PPM Skin	5 PPM Skin	25
Sodium chromate	7775113	101	00	0007	50 h∂\w <sub>3</sub> Ct	(C 1 m2\40, C±O	0.3
Potassium hydroxide	1310583	10	00	0002	C 2 mg/m <sup>3</sup>	Nt Estab	3.1
			·•			311	
CARCINOGENS		<del>አ</del> ፕዖ		URC .		OSHA .	
Sodium Chromate (0.30%)	lis	sted	lis	sted	not re	gulated	SE COL
PROPER SHIPPING NAME:	<del></del>	HAZARD C	۵۵۵		HAZARD I.D.	No. ST	rciiviu ?
Paint Related Material		Corro	cive		ี บพ 1760		ERSONAL

### SECTION III - PHYSICAL DATA :

EOILING POINT, 'F: Approx 105°F	SPECIFIC GRAVITY: 1.17
VAPOR PRESSURE (mmHc):   Approx 400mm	VOLATILE, W BY VOL: Approx. 50
VAPOR DENSITY (AIR = 1): More than 1	EVAPORATION RATE
APPEARANCE AND ODOR:	(Bu. Ac. = 1): less than 1
Two layer amber liquid, phenol odor	SOLUBILITY IN WATER: Appreciable  pH 3.1% in H <sub>2</sub> O 8 - 10

## SECTION IV - FIRE AND EXPLOSION HAZARDS:

FLASH POINT AND METHOD USED:

None to boil (Setaflash)

EXTINGUISHING MEDIA:

Carbon dioxide, foam, water fog

SPECIAL FIRE FIGHTING PROCEDURE AND PRECAUTIONS: Use self-contained respiratory protection. Any water runoff may contain hexavalent chrome and should not be allowed to enter sewer or water-

UNUSUAL FIRE AND EXPLOSION HAZARDS: Thermal decomposition may produce toxic oxides of carbon and chlorine. Drums exposed to 100°F and above may develop sufficient internal pressure to rupture.

## SECTION V — EMERGENCY, FIRST AID AND HEALTH INFORMATION:

EFFECTS OF OVER EXPOSURE: Vapors: Moderate to severe irritation Liquid: Severe damage, may cause blindness

Skin: Chemical burns, possible necrosis, defatting. May be absorbed through skin in toxic amounts. Chromates are skin sensitizers.

INHALATION: Dizziness, headache, intoxication. Inhalation of mist of chromate-containing materials may cause permanent damage to upper respiratory tract, and may cause lung

MGESTION Severe irritation to gastrointestinal tract, may be harmful or fatal if swallowed. Toxic effects may not appear immediately.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED Metabolism of methylene chloride to carbon monoxide may lead to accumulation of dangerous levels of carboxyhemoglobin which may not be tolerated by persons with impaired cardio-pulmonary function. This may be aggravated by smoking.

oun. Flush affected area with clean cool water. Wash with scap and water. Rinse thor-	98
NHALATION: Remove to fresh air. If breathing is difficult, administer oxygen. If breathing	7
has stopped, apply artificial respiration. Obtain medical attention.	
INGESTION: Do not induce voriting except on advice of qualified medical personnel. If victim is conscious; dilute by giving large volumes of milk or vater. Obtain immediate medical attention. Never attempt to induce vomiting or give anything by mouth to an unconscious person.	
PRIMARY ROUTES OF ENTRY: INHALATION X SKIN CONTACT X OTHER	
ECTION: VI - REACTIVITY DATA :	
STABILITY: STABLE Y UNSTABLE HAZARDOUS POLYMERIZATION WILL NOT OCCUR	
CONDITIONS TO AVOID.	
Contact with surong acids, strong oxiditing agents, open flame	
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, phosgene, acid gases, other	
toxic volatile organic compounds	
ECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURE:	
SPILL OR RELEASE PROCEDURE: CONCENTRATE: Contain spillage. Stop leak at source, if this can be	
done safely. Ventilate area. Evacuate nonessential personnel. Pump liquid into DOT- approved drums for disposal. Absorb remaining liquid with inert material and place in DOT-approved drums. Wash area with water. Collect washing and place in DOT-approved drums. Keep concentrate and wash water from entering sewer or waterways.	
USE SOLUTION: Not applicable	
recovery. (2) Transfer to licensed hazardous waste treatment or disposal site for disposition under applicable local, state and regional regulations as hazardous waste.  SPENT SOLUTION AND RINSES: Dispose per (1) and (2) above. Treat rinse water as hazardous waste. Remove chromate by reduction and precipitation. Remove organics by oxidation and carbon treatment. Clarified rinse water may be released to sever if local regulations permit.	
SECTION VIII — SPECIAL PROTECTION INFORMATION:	•
RESPIRATORY PROTECTION: 11 TW is exceeded, a NIOSM-approved self-contained breathing apparatus, positive pressure hose mask or air line mask is advised. These should have a full face piece and be operated in a positive pressure mode. Because of the short breakthrough time of mothylene chloride and its poor varning properties, organic vapor cartridges or canisters are not recommended. If respirators are used, a formal training and screening program must be initiated. See 29 CFR 1910-134.  VENTILATION:	
Maintain sufficient makerial marketing for the second seco	
Maintain sufficient mechanical ventilation to keep concentration below TLV.	4
PROTECTIVE EQUIPMENT: CHEMICAL FACE SHIELD OR GOGGLES: Y  GLOVES Y BOOTS X APRON Y PROTECTIVE SUIT If required to avoid pro-	1
GLOVES Y BOOTS Y APRON X PROTECTIVE SUIT 11 FEGULTED to avoid pro-	
RECOMMENDED PERSONAL HYGIENE: Wash hands and face with soap and water before smoking or eating	一
Discard contaminated shoes.	
SECTION IX — OTHER INFORMATION:	
SPECIAL PRECAUTIONS - STORAGE AND HANDLING: Store in cool area protected from exposure to direct sunlight, rain or standing water. Use care in opening containers to avoid spurting. CAUTION: Vapors from this product are heavier than air and will travel along the ground to collect in low lying areas, such as sumps. Personnel entering such afeas must be provided with respiratory protection and a safety line. They should be rept under charration while the area by another rain at a safe distance. Persons yearing contact lenses should wear vapor-proof well-fitting the mixing. Not applicable	,   
REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT Relieve pressure. Cover openings to avoid spurting Clean exterior and interior by flushing with water or solvent. Collect flushing for disposal. Use protective equipment for eyes, skin and inhalation.	 s -
DATE PREPARED: 10-31-85 DATE REVIEWED.	

## Material Safety Data Sheet

088 DS F

## OIL' SOLVENT PROCESS COMPANY

REGIO

1704 W. First Street Post Office Box 907 . Azusa, California 91702

NOITESTICAN

Emergency Telephone Nos. 7 AM - 5 PM Call OSCO (213) 334-5117 24-Hour CHEMTREC No. 1-800-424-9300

PRODUCT:	WARNING STATEMENT:
PETROLEUM NAPHTHA	CAUTION! VOLATILE SOLVENT
#27 Paint Thinner	If swallowed call a physician
N1094	at once. May cause serious injury or even death.
PROPER SHIPPING NAME PETROLEUM	HADUTUA
PETROCEON	SACETOA
DOT CLASSIFICATION	
COMBUSTIBLE LIQUID	PHOTOCHEMICALLY REACTIVE
DOT LABELS REQUIRED	
NONE	NON-PHOTOCHEMICALLY REACTIVE MORE Than 4%
PLACARDS REQUIRED	
COMBUSTIBLE LIQUID	X NON-PHOTOCHEMICALLY REACTIVE LESS Than 4%

All information appearing herein concerning our product is based upon tests and data believed to be reliable; however, it is the user's responsibility to determine the safety, toxicity, and suitability of the product for his own use. Since the actual use by others is beyond our control indiguarantee expressed or implied, is made by OSCO as to the effects of such use, the results to be obtained for the safety and toxicity of the product nor does OSCO assume any happing arising out of use by others, of the product referred to herein. Her is the information nervin to be constitued as absolutely complete since additional information may be necessary when particular conditions exist or because of applicable, taws or government regulations.

## U.S. DEPARTMENT OF LABOR

Occupational Salety and Health Administration

## Form Approved OME No. 44491347

# 1088

## MATERIAL SAFETY DATA SHEET

7906

Required under USDL Salety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)



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APPEARANCE AND ODOR Clear, wate	1			
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SECTION IV  FLASH POINT (MAINCE USED)  EXTINGUISHING MEDIA  CO2. CT	F. C.O.C.	EXPLOSION HAZARD DATA		U-1
SECTION IV  FLASH POINT (MAINCE USAGE)  EXTINGUISHING MEDIA  COD. CT	FIRE AND F. C.O.C. chemicals.	EXPLOSION HAZARD DATA		U-1

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## ATTACHMENT C

LETTER TO RUSSELL DAVIS FROM BOB DAVIS FOR THE REMOVAL OF THE 4,000-GALLON TANK



## FIRST PAGE WIRE

PACIFIC AIRMOTIVE CORPORATION 2940 N. HOLLYWOOD WAY BURBANK, CA 91505-1095 TELE: (816) 842-5171

## TELECOPY TRANSMITTAL SHEET

DATE:	MARCH 16,	1988			
TO:	MR. KELLY	Shliva	AN	1	
COMPANY:	KENNEDY/JE	икs/Снј	LITON		
TELEPHONE	: _(916)_3	62-9919	<u>-</u>	····	
FROM:	MR.Bul	GROSS			
NUMBER OF	PAGES:	3 (	INCLUDIN	G COVER	PAGE)
	LL US AT (8 OR IF THERE				

TO TRANSMIT:

WEEKDAYS 8:00 A.M. - 5:00 P.M.

January 15,1984

Alrwork Corporation Millville, Nev Jerney

Atun; Russell Davis

Subj. Underground tank removal, Burbank, Calif.

The following tanks were removed from the below addresses under the supervision of the Burbank Fire Dept. The tanks were found to be sound and showed no signs of leakage.

## 3303 No Hollywood May

2	9940	allon	12	15	83
Ţ	-2500 g	allon		15	
ŀ	1000	allon	12	13	b 3

## 2940 No Hollywood Way

retrofited aboveground

1 2000 gcllon 2 1500 gallon 1 550 gallon	12	55 55 57	83 83 83 83 (2000ge 83	( ;
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\*soogal a.g. solvent

Very truly yours,

Bob Davia

CC Jerry Flanders

BOR MAUTS 11944 CANTARA NO HOLLYWOOD CA 91505

4 -259682 2 V/T

LEST

NET 30

12/14/8312/21/

001

THIS PURCHASE

1 LT

NET \$14000,00

ORDER TO COVER REMOVAL OF THE FOLLOWING TANKS IN ACCORDANCE WITH THE ATTACHED SKETCHES:

\$1 - 1,500 BAL

42 - 1,500 GAL

\$3 - 3,000 BAL

44 - 4,000 GAL

\$5 -- 2,000 GAL

49 - 500 BAL

♦10 - 2,500 GAL

\$11 -10,000 GAL

\$12 -10,000 BAL

#13 - 250 GAL

\$14 - 500 GAL

ALL TANKS TO BE REMOVED FER SPECIFICATION BELOW

- 1. FROVIDE PERMITSFROM BURBANK FIRE DEPT FOR TANK REMOVAL
- 2. ALL-TANK REMOVAL MUST BE ACCOMPLISHED BY 12-31-83
- 3. FROVINE BACK FILL AND COMPACT WITH CERTIFIED SOIL INDEGENOUS TO LOCAL AREA
- 4. REFAIR BLACK TOP TO ORIGINAL SPECIFICATIONS
- 5. HAUL AWAY DEBRIS
- 6. RETAIN ALL TANKS REMOVED AT VENDOR'S STORAGE FACILITY FOR INSPECTION BY SALVAGE COMPANIES

SEE ATTACHMENTS FOR REFERENCE 20-144-001 MSR 00037

1088

ATTACHMENT D
UNDERGROUND TANK PRESSURE TEST RESULTS

CONSULTING ENGINEERS AND ENVIRONMENTAL PLANNERS

Golden West Business Park 15142 Golden West Circle Westminster, CA 92683 (714) 895-5535

FILE NO. 87-845 July 30, 1987 1088

PACIFIC AIRMOTIVE 30003 North Hollywood Way Burbank, California 91505

Attention: Mr. Bill Gross

Subject: UNDERGROUND TANK TESTING AND CERTIFICATION AT 2940

NORTH HOLLYWOOD WAY, BURBANK, CALIFORNIA

Dear Mr. Gross:

In accordance with your Purchase Order #4-145071, we arrived at the subject facility on July 29, 1987 at 7:57 A.M., to test two underground tanks (manifolded) using the Horner Ezy-Chek Leak Detection Equipment.

A full systems test was performed on two (2) 12,000 gallon manifolded tanks which were certified with a test result of -0.0122 gallons per hour.

The following information is included in this report as a requirement of the regulatory agency:

- \* The tanks were filled for testing on July 28, 1987.
- \* The tanks are constructed of steel.
- \* The type of pump is suction pump.
- \* The distance from grade level to product level was approximately 20 inches above grade.

Enclosed is a copy of the pertinent worksheet. If you have any questions, please call.

Very truly yours,

HEKAMIAY & ASSOCIATES, INC.

Kenneth K. Hekimian, Ph.D., P.E. President

KKH/jlw Encl: Worksheet

HEKIMIAN & ASSOCIATES, INC.	ſ
HEKIMIAN & ASSOCIATES, INC.	•

77 76 75 77 74 7/2 2 2 3

Golden Weit Business Park 151-12 Golden Weit Circle Westminster, CA 92883 (714) 895-55533 EZY-CHEK WORKSHEET

DATE: 07/29/1987

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CONSULTING ENGINEERS AND ENVIRONMENTAL PLANNERS

Huntington Pacifica 18377 Beach Boulevard, Suite 212 Huntington Beach, CA 92648 (714) 841-6288

FILE NO. 86-244 July 7, 1986

MARKHAM EQUIPMENT 2006 West Clive Street Burbank, California 91506

Attention: Mr. Doug Markham

Subject: UNDERGROUND TANK TESTING AT PACIFIC AIR-MOTIVE, 3003

HOLLYWOOD WAY, BURBANK, CALIFORNIA

Dear Mr. Markham:

In accordance with P.O. No. L-0320, we arrived at subject facility on July 2, 1986 at 2:30 P.M., to test one (1) 20,000 gallon Jet Fuel underground tank system using the Horner Ezy-Chek Leak Detection Equipment.

A full systems test was performed on this tank which passed with a leak rate of -0.0417 gallons per hour.

The following information is included in this report as a requirement of the regulatory agency:

- o The tank was filled for testing on July 2, 1986 at 7:30 A.M.
- o The tank is constructed of steel.
- O The type of pump is suction pump.
- O The depth of ground water is greater than 50 feet.
- O The distance from grade level to product level is 36 inches above grade in stand pipe.

During testing it was necessary to disconnect level indicator to eliminate vapor pocket.

FILE NO. 86-244 July 7, 1986

1088

Enclosed are copies of all pertinent worksheets. If you have any questions, please call.

Very truly yours,

HEKIMIAN & ASSOCIATES, INC.

Kenneth K. Hekimian, Ph.D., P.E.

President

KKH/pte

Encl: Worksheets

Invoice No. 3537

ATTACHMENT E

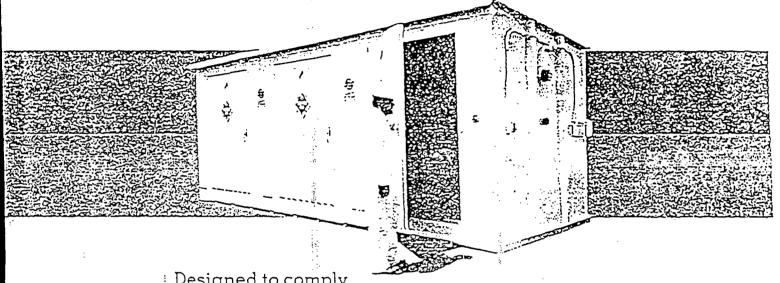
CATALOG SPECIFICATIONS FOR THE NEW CONTAINMENT FACILITY

# Safety Storage Buildings

1088

Approved

for chemicals and hazardous materials



- Designed to comply with regulatory standards for storing hazardous materials
- : Minimize liability
- Factory-built to user requirements
- Three model sizes
- Readily available
- ; Relocatable
- 1 Nationwide engineering services
- : Cost-effective



lehis Storage 7 EARTH GUARD 30 Swiishire Blyd Ste 2000 Beyenis Hills (24, 902) 1 3 5 5

Salety Storage chemical and hazardous material buildings are readily available for delivery throughout the United States. Three different size models can be used immediately upon delivery. They are turnkey units which require a minimum of site preparation. These high-quality units meeting overnment standards and regulations for hazardous materials storage. You can gain in many ways when you order:

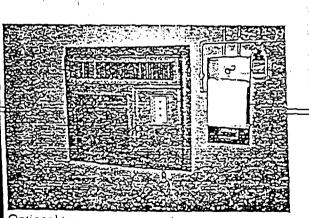
- : More economical than comparable block or concrete structures.
- a Can be tailored to fit your requirements.
- Avoid costly delays characteristic of on-site construction.
- Combine spill containment, security, fire protection and worker safety.
- Can be relocated on- or oii-site.
- 2 You pay only for the features you need.

Salety Storage building construction

Safety Storage buildings are made of welded 10and 12-gauge steel with supporting structural steel sections. Three models are available, the largest of which is the Model 22 with outside dimensions of 22'8" x 9' x 8'7%". Three doors, each with three-point locking systems, provide access and security. The 570-gallon secondary spill-containment reservoir, the walls and ceiling are all covered with two coats of chemical-resistant epoxy. Maximum storage capacity is 10 tons of chemicals and hazardous materials (drums, boxes and cans). For example, thirty 55-gallon drums can be conveniently accommodated. Loading can be by forklift or by hand. Standard floors are 11/8" thick, epoxy-coated, fire-retardant plywood.

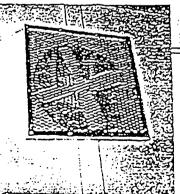
Salety features in this carefully engineered unit include a spill-containment sub-floor to prevent escape of hazardous liquids or solids. It is constructed of continuously welded 10-gauge steel which is epoxy coated to resist chemical attack. Blow-out panels can be provided for pressure relief under explosive conditions. A static grounding connection helps to protect flammable materials from ignition by electrical discharge. And fire protection is supplied by three water sprinkler heads with a 2" NPT fitting located outside the building for sprinkler system hookup.

Permanent placards and NFPA 704M rating signs are provided for flammable materials, corrosives, oxidizers, poisons and other hazardous materials stored within.

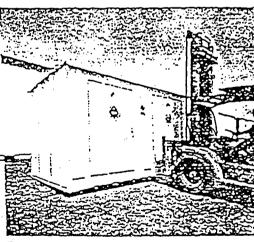


Optional temperature-control system for temperature-sensitive chemicals.

Non-sparking exhaust lan and protective aluminum shield (shown without louvered cover).

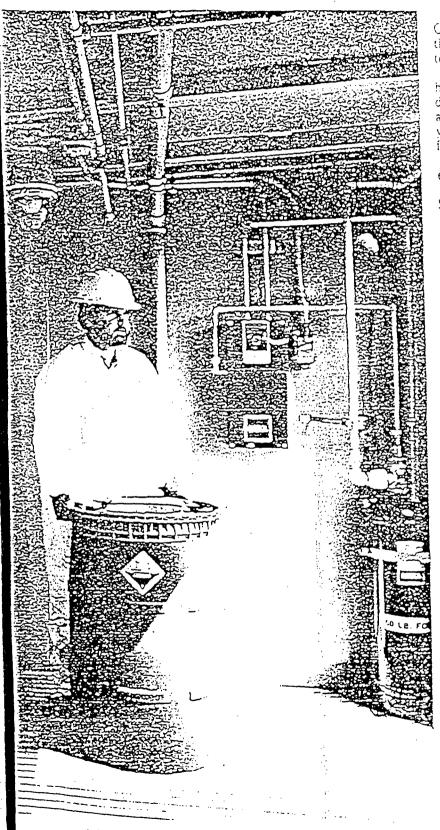


Forklift moving a Safety Storage chemical building to a new location.



1088

# achieve compliance in chemical 88 and hazardous material storage?



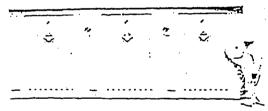
You know they're out there. Corrosives, maybe. Or poisons. Oxidizers. Flammables. Scattered about the plant or complex. Maybe even worse — stored together.

But you're ready to take action. To remove hazards from main production areas. Provide secondary containment. And institute real fire-protection and security measures. To safeguard personnel and your facility. Minimize liability. And comply with federal, state and local regulations.

You wish there were any easy solution — a costeffective alternative to permanent buildings.

There is — relocatable prefabricated Safety Storage buildings.

Safety Storage buildings offer a comprehensive response to compliance requirements. Because they're from a company experienced in — and dedicated to — solving chemical and hazardous material challenges. A company with a network of held engineers who understand the complexities of compliance regulations. Backed by a half-century of manufacturing know-how and plants on both U.S. coasts, they're people able to tailor precise solutions to your storage requirements.



Proven throughout the country—in all climates and with virtually every hazardous material—all Safety Storage buildings incorporate secondary containment reservoirs, hre-suppression systems, forced-air ventilation, and special security measures for access and inventory control.

Choose one to handle several 55-gallon drums — or as many as 40. And select from an array of options ranging from explosion-resistance and built-in heating and cooling to emergency eye/face wash units — even multiple fire-wall-separated compartments in a single unit.

Call or write today and find out more about prefabricated Safety Storage buildings — simple solutions to a complex problem.

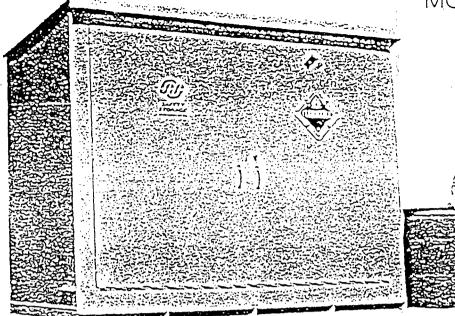


Selety: Storage / EARTHGUARD 8306 Wilshire Bivd - Ste 9000 Ball Beverly Hills CA 9021 1235 12131: 543-4270

#### 。CHEMIGAL STURAGE BUILDINGS

MODELS 4, 6 & 10

1088





Patent Pending

SAFETY STORAGE \*\*
BUILDINGS comply
with new regulations...

Safety Storage buildings have been carefully designed and constructed to comply with current environmental regulations. They also meet regulatory agency requirements for storing hazardous wastes in a secured enclosure. Our buildings' high quality design standards are consistent with local Hazardous Material Storage Ordinances requiring hazardous chemicals to be stored in secondary containment structures to prevent spills: or leaks from contaminating groundwater.

#### SAFETY STORAGE BUILDINGS Construction Features:

#### STANDARD DESIGNS

- ☐ Safety Storage Buildings are specifically designed for hazardous material storage and handling.
- ☐ These sturdy units are constructed of 10 and 12 gauge ASTM-A569 steel to provide structural strength and security.
- Storage units are designed with a 6" sump providing secondary spill containment.
- ☐ Chemicals can be conveniently stored inside each unit in drums, boxes, on pallets, in 5-gallon cans or other sizes.
- Storage units can be loaded/ unloaded using a forklift or by manual means.
- All interior surfaces are coated with a chemical-resistant epoxy paint.
- ☐ Standard floors are 1¼"-thick epoxy-coated, fire-retardant-treated plywood. The flooring is designed with removable sections to permit visual inspection for leaks or spills.
- A static grounding connection is provided on each unit to protect flammable/combustible liquids from ignition by electrical discharge.

#### OPTIONAL FEATURES

- ☐ Safety eye/face wash units can be installed where supply water hookup is available. Self-contained pressurized units can also be provided for remote locations.
- ☐ Two types of fiberglass floor gratings are available.
- A spill containment sump liner constructed of polypropylene can be installed for additional protection.
- ☐ Storage shelves constructed of heavy gauge epoxy-coated steel can be installed for convenient storage of small chemical containers.
- ☐ Hold-down assemblies can be provided for securing the unit.



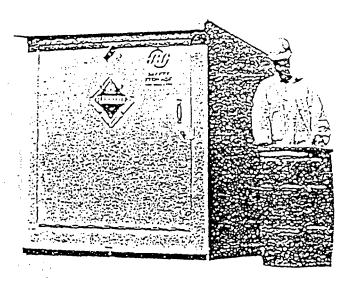
SAFETY STORAGE, INC.

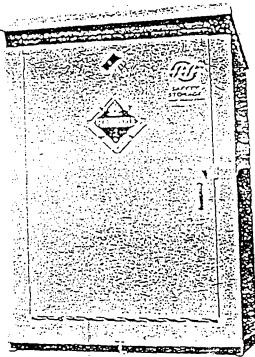
Diane Melo Safety Storege/Eurhymand \$206 Wilshire Blod - Ste 2000 Beverly Hills, CA 20211

## CHEMICAL STORAGE BUILDINGS

MODELS 4, 6 & 10

1088





#### COST BENEFITS:

Pre-fabricated storage buildings are cost effective and more economical than comparable cinder block and concrete structures. You can avoid costly delays in meeting hazardous material storage regulations by ordering Safety Storage units. These facilities are ready to use upon delivery. Units can be located near shipping docks or other convenient and accessible locations. Cost savings result

from reduced material handling time and lower material loss rates. The company insuring you against loss will appreciate your efforts to reduce your exposure to chemical risks.

#### ORDERING ASSISTANCE:

Our sales representatives are experienced in helping you solve your chemical storage problems using Safety Storage buildings. They will assist you in developing your chemical storage plan and

prepare detailed sketches and specifications for your individual storage requirements. Our manufacturing plants will commence preparing your buildings upon receipt of your purchase order. We have provided Safety Storage buildings to the U.S. Government, major universities and Fortune 500 companies throughout the United States. Safety Storage buildings are available for immediate delivery.

#### MODELS AND BASIC STATISTICS

MODEL	OUTSIDE DIMENSIONS			INSIDE DIMENSIONS			WEIGHT	DOOR OPENINGS		DESIGNED STORAGE CAPACITY			SUMP
)	LENGTH	HTOIW	HEIGHT	LENGTH	ורדסוש	HEIGHT	281	HEIGHT	WIOTH	WEIGHT (LBS.)	SQ. FT.	ORUMS	CAPACITY [GAL]
10	10.6-	6'4"	8.4-	10.4-	2.8-	6.3-	2600	6.9-	4.6.	7500	59	6-12	150
.6	6.	6:4-	8'4"	5'8-	5.9-	6.2	1800	6.9-	4.6.	4000	32	4-5	100
4	6.	6.4.	5'4"	5'8"	5'9"	4'11"	1500	4'10"	4'7"	4000	32	4-5	100



SAFETY STORAGE, INC.

Diane Maler
Safety Stomoof Earthquard
\$306 Wilshim Blot - Str. 2000

#### Equipped to meet your needs

Optional features are determined by your specific storage requirements. For example: If you are going to store flammable liquids, we offer a dry chemical system to supplement or replace the standard sprinkler system. If you plan to store incompatible materials, we can install suitable separation walls. And, if you require shelf space for small containers, we can provide sturdy, epoxy-coated shelves of 154 "depth.

Corrosives?...We cifer a polypropylene spill-containment reservoir liner and fiberglass floor grating for additional protection. Do you want to monitor liquid spills continuously? Another option is a liquid-level detector that can either tie into your plant security system or an exterior audible alarm.

Worker safety?...We have selected only UL-approved equipment for lighting and explosion-proof electrical wiring systems—which also meet NEC, NFPA and NEMA requirements. The forced ventilation system is designed to provide one air change per minute and is powered by a Class I, Division I, totally enclosed explosion-proof motor. The fan has non-static aluminum blades, and the ductwork is epoxy-coated steel.

Safety Storage buildings can be equipped with heating/cooling units to provide a controlled

environment for stored chemicals. Double-wall 088

Emergency eye/face wash units are still other worker-safety options.

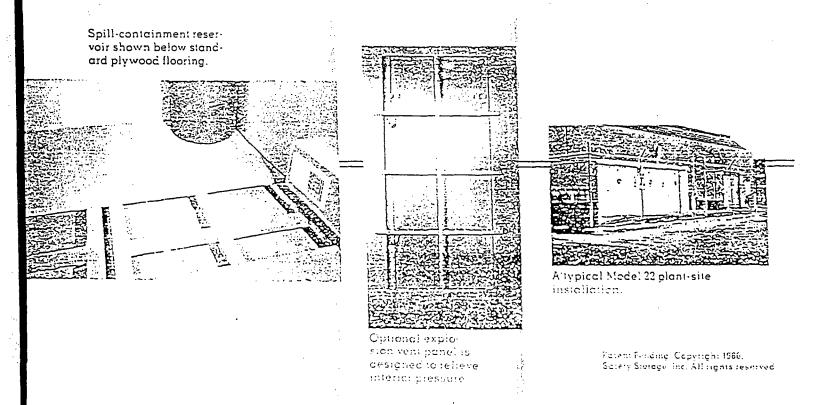
How you can benefit from installing Safer Storage buildings

Regardless of how you equip your new Safety Storage chemical buildings, you benefit in many ways

Spili concomment. Soil and ground-water pollution from chemical leaks is of major concern throughout industry. Your company's possibility of liability can be reduced by using easily-monitored Safety Storage buildings with secondary containment for leaks and spills. We believe you will find them to be a safe, efficient solution to this potential environmental problem.

Fire presentation. The risk of fire is always present when storing hazardous and flammable materials. Safety Storage design engineers have incorporated suggestions and recommendations from fire-protection specialists across the country to meet or exceed design and regulatory standards.

Security. Accountability and security are closely linked. It is essential in today's business climate



to be able to document and account for the rect pt 8 {
storage, handling, use and disposal of chemicals and hazardous materials. This includes tight control over access to Safety Storage buildings with their three-point locking doors. Security is another Safety Storage cornerstone.

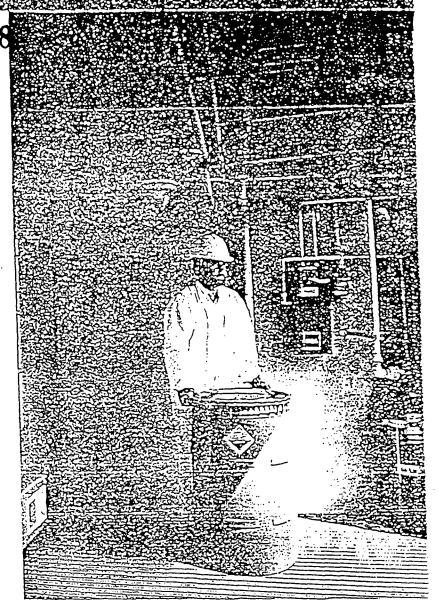
Worker safety. You can be assured that every effort has been made in the design and manufacture of these chemical storage buildings to protect the safety of personnel. Safety leatures include warning placards, static grounding, alarms, security locks, fire protection, emergency washing facilities, ventilation, temperature control, exterior switches and sprinkler system hook-ups.

#### Ordering information

Features for buildings manufactured by Safety Storage, Inc., can vary widely for each individual application. Therefore, design specifications are custom written to fit each model and usage. In addition, a leasing option is available to help serve your chemical-storage needs now, while conserving your capital.

#### Safety Storage Sales Papassatatives

Safety Storage sales representatives, located in most U.S. industrial communities, are trained to help you attain your sale chemical storage objectives. They will assess your chemical storage needs, prepare detailed storage-unit sketches and specifications, and provide written price quotations. Our manufacturing plants are strategically located to reduce delivery costs and shorten delivery times.



1088

#### Models and basic statistics

Model	Outside Dimensions			Inside Dimensions			Weight	Door Openings		Designed Storage Capacity			Sump
	Length	Width	Height	Lengih	MIDIM	Height	(LDs.)	Height	Width	Weight (Lbs.)	Sq. Ft.	Drums	(Gallons)
22	22.8"	6.0.	8'71/2"	21'11%"	8.05/4	7'01/:	8.600	6.63/"	4'o"	20.000	176	24-40	570
15	15'3%."	ð.0 <b>.</b> .	8.71/2"	14'71/2"	8.03/6	7:01/2"	6.000	6.63/1	4'6"	14.000	117	16-28	380
7	8'01/4"	۵.0	8'71/2"	i 7'3%"	8.0%.	7'0%"	3.400	9.63%	4.5	7.000	58	δ-12	190



SAFETY STORAGE, INC.

18900 Stevens Creek Bivd. Cupertino, CA 95014 408-252-2750 1-800/621-0854 Ext. 926 The contents of this brochure outline the general capabilities of Safety Starage, Inc., buildings and should be used only as quidelines for anotherities and applicability. No warranty is implied in the most synthetic means at this brochure. Individual warrantees are written for each customer's specifications.

Containly for the second core on PM approval at expensionems.

SS-101 Printed in U.S.A. 787

IA REPRESENTALIVES

FIRM NAME AUTA CORFORATION APPLIED HISSYSTEMS AFFILIED MATERIALS AUSTIN UNIVERSITY

BATTELLE LAFORATORIES BECTON-DICKENSON

CAILE DATA
CALIF. INST. TECHNOLOGY
CITY OF CUPERTING
CITY OF SANTA CRUZ
COMPAC COMPUTERS
COOPER LASERSQUICS
CREST GRAPHICS
CTS METALS

DATA GENERAL DEFENSE DEFOT TRACY DIGITAL EDUIFMENT CO. DNAX RESCARCH INST.

FAIRCHILD . FEDERAL HOSE CORP. FLORIDA A U H UNIVERSITY FLOUHOCHEM

GENERAL MOTORS GENERAL MOTORS GPU NUCLEAR CORP.

HEWLETT-FACTARD
HILL AIR FOACE BASE
HYUNDA ELECTRONICS

INTERSIL INC. (G.E.) I.O. LARS

HAYPRO COMPUTERS HINGS ELECTRONICS

L.A.COUNTY-SHERIFFS DEFT. LAM RESEARCH LAMER UNIVERSITY LAWRENCE LIVERHORE LAH.

MARE ISLAND NEVAL SHIFYARD
MASS. INST. OF TECH (MIT)
MCDONNELL DOUGLAS ASTRONAUTIC
MEMORE'S COMPUTER TAPE
MICRONIY
MICROSAFE INC.
MONROE AUTO EDUIF.

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LEXINGTON, MASS.
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MONROE, MICHIEAN

NARDA MICROMAY NEW DEPARTURE HYATT N.Y. POWER AUTHORITY NORTHROP CORPORATION NORTHROP CORPORATION

OCEAN TECHNOLOGY OHIO MATERIALS OFTICAL COATING LAF.

FACIFIC GAS & ELECTRIC FRECISION MONOLITHICS PYRAMID FAINTING

RAYTHEON CORFORATION RCA CORPORATION RCA CORPORATION REDWOOD EMP. DISFOSAL ROCHWELL INTERNATIONAL ROCHWELL INTERNATIONAL ROSE MEDICAL CENTER

S.E. MASS UNIVERSITY
SEN SYM
SENTRY TEST SYSTEMS
SIGMAFORM MATERIALS
SILICON SYSTEMS
SOLITEC
STANFORD UNIVERSITY
STATE OF FLORIDA

TEGAL CORPORATION TELEDYNE-CHE

U.C. PERIELEY
UNDERURITERS LAF.
UNITSYS (FURROUGHS)
UNITED ALUMINATING
UNITED STATES ARMY
UNIVERSAL SEMICONDUCTOR

VA MEDICAL CENTER VARIAN VARIAN VERSATEC ( /EFOX ) VTI-VLST TECHNOLOGY

WESTERN BIGTAL
WESTERN HITTOHAVE
WESTINGHOUSE
WESTINGHOUSE
LER, GRACE

KERO) CORECALLIBU

PALO ALTO, CA.
FOSTER CLIY, CA.
SANTA CLARA, CA.
SANTA CLARA, CA.
AUSTIN, TEXAS DUXBURY, MASS. LOS GATOS, CA.

RANCHO CURDOVA, CA.
PASADENA, CA.
CUPERTINO, CA.
SANTA CRUZ, CA.
HOUSTON, TÉXAS
PALO ALTO, CA.
COMMERCE, CA.
SAN JOSE, CA.

SUNNYVALE, CA. TRACY, CA. SHRENSEURY, MA PALO ALTO, CA.

PULALLUP, WASHINGTON FREDONT, CA. TALLAHASSEE, FLORIDA ALUSA, CA.

FLINT, MICHIGAN WARREN, MICHIGAN PARSIPPANY, NEW JERSEY

SUNNYVALE, CA. HILL AFB, UTAH SANTA CLARA, CA.

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LIVERMORE, CA.

SAN JOSE, CA. HRISTOL, CONNECTICUT OSWEGO, NEW YORK HAUTHORME, CA. NEWFERRY FARK, CA.

BURBANK, CA. FINDLAY, DHID SANTA ROSA, CA.

11 LOCATIONS IN CA. SANTA CLARA, CA. SUNNYVALE, CA.

SUDMURY, MASS.

MODRESTOUN, NEW JERSEY
PALM FEACH, FLORIDA
SAMTE ROSA, CA.
SEAL FEACH, CA.
SAN JOSE, CA.
DENVER, COLORADO

NORTH DERTHOUTH, MASS.
SUNNYVALE, CA.
SAN JOSÉ, CA.
SANTA CLÁRA, CA.
TUSTIN, CA.
SANTA CLARA, CA.
FALO ALTO, CA.
TALLAHASSEE, FLORIDA

NOVATO, CA. SAN JOSE, CA.

RERUELEY. CA.
NORTHEROOM ILLINOIS
SANTA MARGARITA. CA.
FRIDGEFORT. COMMECTICUT
FORT LEE. VIRGINIA
SAN JOSE, CA.

MOUNTAIN HOME, TENNESSEE FALD ALTO, CA. SAIT LAKE CITY, UTAH SUMMYVALE, CA. SANTA COST. CA.

SUMMADE CA. SCAME POSMIC THEN CAMB SUMMADE CA. INSTANDADE IS MOTAMA

ROCHESTER, NEW YORK

DEL 22 : "BASIC UNIT" OUTSIDE DIMENSIONS (L x W x H : 22 ° 8 ° x 9 ° x 8 ° 7-1/2" COMPLETE WATER RELINKIES SYSTEM INTERNALLY WITH THREE (3) HEADS  1088
. YNTERNAT CHERTOAL RESISTART EFENT COATTEG (CRITTING, WALLS, SUB-FLOOR)
INTERNAL SPILL CONTAINMENT CAPACITY: SYO zelloge EPOXY COATED (3x) FLYWOOD FLOOR (THICKNESS: 1 1/2") THREE DOORS WITE 3-POINT SECURITY SAFETY LOCKS
- THREE INTERNAL GROUNDING/BONDING LUGS - ONE EXTERNAL GROUNDING ROD - THREE D.O.T. PLACARDS (PERMANENT)
- THREE NFC 704M RATING SIGNS (PRESSURE SENSITIVE) - MAXIMUM STORAGE CAPACITY: 24-40 DRUMS AT SINGLE-LEVEL ( 55 GALLON SIZE )
B) STRUCTURAL OPTIONS: ( SUGGESTED )
1. EXPLOSION RELIEF COMSTRUCTION / $y/z3$
2. CHEMICAL SEPARATION WALL - METAL
3. CHEMICAL SEPARATION WALL - 2 HOUR FIRE RATED
4. CORROSIVE-RESISTANT FIBERGLASS FLOOR GRATING ( BY COMPARTMENT )
5. CORROSIVE-RESISTANT FIBERGLASS FLOOR GRATING ( FULL BUILDING )
6. GENERAL PURPOSE FIBERGLASS FLOOR GRATING ( BY COMPARTMENT )
7. GENERAL PURPOSE FIBERGLASS FLOOR GRATING ( FULL BUILDING )
3. POLYPROPYLENE SUMP LINER ( BY COMPARTMENT )
9. POLYPROPYLENE SUMP LINER ( FULL BUILDING )
10. SHELVING 15" DEEP ( PER LINEAR FOOT )
11. HOLD-DOWN ASSEMBLY FOR SEISMIC BRACING
12. GAS CYLINDER WALL MOUNT (EACH)
C) FIRE PROTECTION OPTIONS: ( PER CLIENT NEED )
1. DRY CHEMICAL FIRE SUPPRESSION SYSTEM ( BY COMPARTMENT )
2. DRY CHEMICAL FIRE SUPPRESSION SYSTEM ( FULL BUILDING )
3. FIRE DEPT. HOOKUP 2-1/2 NHT FITTINGS
D) EXPLOSION-PROOF ELECTRICAL OPTIONS
1. VENTILATION SYSTEM - 1200 CFM (FULL BUILDING-NO SEPARATION WALLS
2. VENTILATION SYSTEM - 450 CFM (PER COMPARTMENT)
3. INTERNAL LIGHTS (1,2, OR 3)
4. LIGHT (EXTERIOR)
5. LIQUID LEVEL DETECTOR with ALARM (PER COMPARTMENT)
E) MISCELLANEOUS "OUTSIDE" OPTIONS:
1. AUTOMATIC ALARM-DIALING SYSTEM
2. EMERGENCY EYE/FACE WASH (PERMANENT)
3. EMERGENCY EYE/FACE WASH (PORTABLE)
4. LOADING RAMP
5. SPECIAL ORDER EXTERIOR PAINT
-LLLL 6. ENTERIOR CHEMICAL-RESISTANT FINISH

### TEMPERATURE CONTROL OPTIONS

ty Ext Leater theorems at States (of the States)	
1. ONE 12,000 BTU/hr. HEATER AND ONE THERMOSTAT.	
2. ONE 26.000 BTU/hr. HEATER AND ONE THERMOSTAT	
3. TWO (2) 12,000 BTU/hr. HEATERS AND ONE (1) THERMOSTAT	
4. TWO (2) 26,000 BTU/hr. HEATERS AND ONE (1) THERMOSTAT	
5. TWO (2) 12,000 BTU/hr. HEATERS AND TWO (2) THERMOSTATS	
6. THREE (3) 12,000 BTU/hr. HEATERS WITH THREE (3) THERMOSTATS	S
7. TWO (2) 26,000 BTU/hr. HEATERS WITH TWO (2) THERMOSTATS	
3. THREE (3) 26,000 BTU/hr. HEATERS WITH THREE (3) THERMOSTAT	S
G) INSULATION ( R-11, with DOUBLE WALL CONSTRUCTION )	
1. CEILING, WALLS, AND DOORS (FULL BUILDING)	
2. SUB-FLOORS (FULL BUILDING)	
3. ONE COMPARTMENT	
4. TWO COMPARTMENTS	
HA AIR CONDITIONING SYSTEMS. (SYRLOGION ROOS)	
H) AIR CONDITIONING SYSTEMS: (EXPLOSION-PROOF)	
1. CLASS I, DIVISION II, GROUP D	
A. 10.700 BTU/hr.	
B. 16,300 BTU/hr.	
C. 24,200 BTU/hr.	
D. 35,000 BTU/hr.	
2. CLASS I, DIVISION I, GROUP D	
A. 10,700 BTU/nr.	
B. 16,300 BTU/hr.	
C. 24,200 BTU/hr.	
D. 35,000 BTU/hr.	
I) AIR CONDITIONING/HEATING COMBINATIONS (EXPLOSION-PROOF)	
1. CLASS I, DIVISION II, GROUP D	
A. 19,000 BTU/hr. COOLING AND 17,000 BTU/hr. HEATING	
B. 34,500 BTU/hr. COOLING AND 22,000 BTU/hr. HEATING	
•	

Kennedy/Jenks/Chilton

ATTACHMENT F

TOTAL PETROLEUM HYDROCARBONS (TPH)
ANALYSIS PROTOCOL

# Kennedy/Jenks/Chilton

Laboratory Division 657 Howard Street San Francisco, California 94105

415-362-6065

#### TOTAE PETROLEUM HYDROCARBONS (TPH) ANALYSIS

- 1. Method
- 2. Sample traces of:

Gasoline/Diesel Standard

Kerosene Standard

Jet Fuel Standard

Paint Thinner Standard

3. Example of an actual Total Petroleum Hydrocarbon Analysis

Submitted in support of Part F, (Other Pertinent Information and Approval)

March 4, 1988

#### Scope and Application

- a. This is a gas chromatographic (GC) method for the determination of gasoline and diesel in contaminated groundwater, sludges, and soil.
- b. This method has also been used for the determination of jet fuel, paint thinner, kerosene and stoddard solvent.
- c. This method is recommended for use by, or under the supervision of, analysts experienced in the operation of GC and in the interpretation of chromatograms.

#### 2. Summary of Method

- a. This method involves the determination of hydrocarbons by the extraction method. A sample, after extraction treatment, is injected into a GC, and compounds in the GC effluent are detected by an F.I.D. An aliquot of each sample will be spiked with standards to determine percent recovery and limts of detection for that sample.
- b. The sensitivity of this method usually depends on the available sample size and the level of interferences rather than on instrument limitations. Table I lists the limits of detection in the absence of interferences for water and soil samples.

TABLE I
TPH METHOD DETECTION LIMITS

Parameter	<u>Matrix</u>	Extraction Method				
Gasoline	Aqueous Soil	0.05 mg/L 1.0 mg/Kg				
Diesel	Aqueous Soil	0.075 mg/L 1.7 mg/Kg				

Note: Detection limits for water are based on extraction of a one-liter sample with 5 mL of pentane; detection limits for soil are based on extraction of 20 g of soil with 2 mL of pentane.

#### Interferences

- a. Solvents, reagents, glassware, and other sample processing hardware must be demonstrated to be free from interferences under the conditions of the analysis by running method blanks.
- b. Before processing any samples, the analyst should demonstrate daily, through the analysis of a solvent blank, that the entire system is interference free.

#### 4. Apparatus and Materials

- a. Gas-tight syringe: 10 mL (two)
- b. Vial with cap: 40 milliliter (mL) capacity screw cap (Pierce number 13075 or equivalent). Detergent wash, rinse with tap and distilled deionized water, and dry at 105°C before use.
- c. Septum: Teflon-faced silicone (Pierce number 12722 or equivalent). Detergent wash, rinse with tap and distilled deionized water, and dry at 105°C for 30 minutes before use.
- d. Mechanical shaker
- e. Disposable pipettes
- f. Eye-dropper bulb
- g. GC: Hewlett-Packard 5880A GC, with FID, autosampler and integrator.
- h. GC column: 30 m X 0.25 mm I.D. Supelco SPB-5 capillary column with film thickness of 0.25 microns.

- i. Detector: FID
- j. Volumetric flask, 10 mL (2), 50 mL (1), 500 mL (1).
- k. Pipette, 1000 uL, adjustable with disposable tips.

#### 5. Reagents

- a. Stock diesel standard solution. Commercially available diesel fuel.
- b. Stock gasoline standard solutions. Commercially available gasoline.
- c. Pentane, pesticide residue analysis grade.
- d. Pristane (2,6,10,14-tetramethylpentadecane), 96% (Aldrich).
- e. Stock extraction solvent: 2000 ppm pristane in pentane. To 500 mL of pentane in a 500 mL volumetric flask, add 668 uL of pristane.
- f. Secondary extraction solvent: 20 ppm pristane in pentane. Place approximately 49 mL pentane in a 50 mL volumetric flask. Add 500 uL of stock extraction solvent with an adjustable pipette. Dilute to mark with pentane and shake.
- g. Secondary diesel and gasoline standard: 10 mL secondary extraction solvent in a 10 mL volumetric flask. Add 5.00 uL of stock diesel standard solution and 5.00 uL of stock gasoline standard to flask and shake.
- h. "Milli-Q" reagent water
- i. Stock standard solutions of other materials (such as jet fuel, kerosene, etc.), can be prepared in the same manner as for diesel fuel and gasoline. Secondary standards can then be prepared.

#### 6. <u>Procedures</u>

#### a. Organic Liquid

Organic liquid can be analyzed by dissolving a known amount of sample into a certain volume of secondary extraction solvent in a volumetric flask.

#### b. Water

- (1) To a 1 liter amber bottle of sample is added 5 mL of secondary extraction solvent.
- (2) Seal and shake the bottle for 45 minutes.
- (3) Allow the phases to separate for minimum of 10 minutes. If emulsion occurs, the analyst must employ mechanical techniques to complete the phase separation.
- (4) Separate the extract for analysis.

#### c. Soil and Sludges

- (1) Weigh 20.0 gram (g) sample into a 40 milliliter vial.
- (2) Fill vial with reagent water.
- (3) Cap vial carefully excluding air.
- (4) Insert a plungerless 10 m syringe through cap (septum), so that needle tip is near bottom of water layer. This allows an escape path for excess liquid.
- (5) Add 2.00 mL of secondary extraction solvent with a 10 mL syringe, keeping syringe tip near top of vial. This action forces out 2.00 mL of water into plungerless syringe. Remove both syringes.
- (6) Shake vial for 45 minutes.

- (7) Allow the phases to separate for minimum of 10 minutes. If emulsion occurs, the analyst must employ mechanical techniques to complete the phase separation.
- (8) Separate the extract for analysis.

#### d. GC Conditions

The usual GC column and operating conditions are:

Column: Helium carrier gas at 30 mL minute flow rate.

Column Temperature: Initial temperature is set at 40°C at the time of injection; held for 8 minutes, then programmed at 8°C minute to a final temperature of 250°C, which is held for 2 1/2 minutes.

#### e. Calibration

(1) Establish GC operating parameters as specified in (d) above. By injecting secondary standards, adjust the sensitivity of the analytical system for the analysis of gasoline and diesel in environmental samples. Detection limits for the extraction method are listed in Table 1. Calibrate the chromatographic system by the internal standard technique. At least three concentration levels should be used for the preparation of the calibration curve. Typical calibrations are at approximately 70, 140 and 350 ppm for gasoline, and approximately 80, 160 and 400 ppm for diesel. One of the standards should be a concentration near, but above, the method detection limit (taking concentration factors into account). The other standard should correspond to the expected range of

- concentrations found in real samples or should define the working range of the detector
- (2) Using injections of 0.80 uL of each calibration standard, tabulate total peak height or area responses against the mass injected. The results can be used to prepare a calibration curve for gasoline for gasoline and diesel.
- (3) The working calibration curve is prepared or verified (to ± 15%) daily.

#### f. Analysis of Samples

- (1) Inject (autosampler) 0.80 uL of secondary extraction solvent (blank).
- (2) Inject (autosampler) 0.80 kL of standards:
  - (a) Secondary diesel and gasoline standard.
  - (b) Two parts secondary diesel and gasoline standard diluted with three parts secondary extraction solvent.
  - (c) One part secondary diesel and gasoline standard diluted with four parts secondary extraction solvent.
- (3) Inject 0.80 uL of the sample extract using the autosampler.
- (4) If the concentration encountered exceeds the linear range of the system, dilute the extract and reanalyze.
- g. Standard laboratory quality control practices must be followed with this method
  - (1) Quality assurance is maintained by performing a duplicate and spike sample for every batch of up to 10 samples of a particular matrix analyzed, as well as blanks and standards

before and after each set of samples analyzed. The spike level is typically 1.00 uL of gasoline and 1.00 uL of diesel per mL of secondary solvent. The industrial statistic for duplicates should be less than 30%; control limits for spike recoveries are 60% to 140%.

#### h. Calculations

To establish density of diesel fuel, gasoline, etc., weigh
 1.00 mL of liquid to 3 significant figures using an analytical balance.

Density of Liquid = 
$$\frac{\text{wt. liquid (g)}}{1 \text{ mL}}$$
.

(2) To establish ppm value of diesel fuel gasoline, etc, in secondary diesel and gasoline standards:

PPM secondary standard = 
$$(0.005 \text{ mL})$$
 (density) (1,000,000)  
liquid 10 mL

- (3) To compensate for variations in injection volumes, pristane is used as an internal standard.
- (4) To establish the amount of analyte (diesel fuel), gasoline, etc) in the sample, main peaks (selected from chromatograms of the secondary standards) are chosen and entered by retention times. Response factors for these main peaks are determined from the chromatograms of standards. Analyte concentrations are quantitated by the following formula:

1088

Quantitation is performed from all of the main peaks selected; an average value is reported.

(5) Actual analyte concentration calculations are carried out using software programs internal to the Hewlett-Packard chromatographic data system.

#### i. Examples

Copies of traces and GC printouts are attached.

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